CLAIMS

1. (currently amended)

A method for use in monitoring a search area, the method comprising:

positioning a plurality of dual channel imaging devices having a medium-resolution for use in daylight and a high-resolution for use in night light to cover said search area, wherein each field of view of each imaging device comprises a field of view portion which overlaps with at least one other field of view of another imaging device, wherein the field of view portion which overlaps is greater than about 25 percent device and less than about 85 percent of the field of view of the imaging device;

providing frames of image data representative of a search area from said plurality of imaging devices, the image data comprising pixel value data for a plurality of pixels;

providing a plurality of time varying Gaussian normal distributions for each pixel generated based on the pixel value data over a plurality of frames of the image data;

providing at least one frame of update image data representative of the search area in an update cycle, the at least one frame of update image data comprising update pixel value data for each of the plurality of pixels,

attempting to match the update pixel value data for each pixel to each of all of the plurality of time varying distributions provide for the pixel, wherein attempting to match the update pixel value data for each pixel to each of all of the plurality of time varying distributions provided for the pixel comprises:

creating a narrow distribution for the pixel based on the update pixel value data and a predetermined variance, the narrow distribution being narrow relative to the plurality of time varying distributions,

computing a divergence measure between the narrow distribution created for the pixel and each of the plurality of time varying distributions provided for the pixel resulting in a plurality of divergence measures corresponding to the plurality of time varying distributions for the pixel,

determining a minimum divergence measure of the plurality of divergence measures, and

comparing the minimum divergence measure to a predetermined cutoff to determine if a match exists or does not exist;

updating the plurality of time varying distributions for each pixel based on whether the pixel value data matches one of the plurality of time varying distributions provided for the pixel; and

ordering the updated plurality of time varying distributions for each pixel based on a probability of the time varying distributions thereof being representative of background or foreground information in the search area for use in determining whether the pixel is to be considered background or foreground information.

2. (cancelled)

3. (cancelled)

4. (original)

The method of claim 1, wherein updating the plurality of time varying distributions for each pixel comprises generating a pooled distribution based on the narrow distribution and a matched distribution if the narrow distribution matches one of the plurality of time varying distributions, and further wherein ordering the updated plurality of time varying distributions comprises determining if the pixel is representative of background or foreground information in the search area based on a position of the pooled distribution within the order of the updated plurality of time varying distributions.

5. (original)

The method of claim 1, wherein updating the plurality of time varying distributions for each pixel comprises replacing on of the plurality of time varying distributions with a new distribution if the narrow distribution does not match one of the plurality of time varying distributions, and further wherein ordering the updated plurality

of time varying distributions comprises assuring that the new distribution is representative of foreground information in the search area.

6. (original)

The method of claim 1, wherein ordering the updated plurality of time varying distributions for each pixel is based on weights associated with the plurality of time varying distributions.

7. (original)

The method of claim 1, wherein at least a portion of the foreground information corresponds to one or move moving objects, and further wherein the method comprises tracking the one or move moving objects in the search area to determine object paths for the one or more moving objects.

8. (original)

The method of claim 7, wherein tracking the one or more moving objects in the search area comprises:

calculating blobs based on pixels representative of foreground information; and

filtering out blobs having less than a predetermined pixel area size.

9. (original)

The method of claim 8, wherein the method further comprises grouping the blobs into object paths representative of one or more moving objects.

10. (original)

The method of claim 9, wherein grouping the blobs into object paths comprises groping the blobs into paths sing a multiple hypotheses tracking algorithm.

11. (original)

The method of claim 7, wherein the method further comprises:

providing one or more defined normal and/or abnormal object path feature models based on one or more characteristics associated with normal or abnormal events; and

comparing the one or more object paths to the one or more defined normal and/or abnormal object path feature models to determine whether the one or more object paths are normal or abnormal.

12. (original)

The method of claim 11, wherein providing one or more defined normal and/or abnormal object path feature models comprises providing one or more defined threatening and/or non-threatening object path feature models based on one or more characteristics associated with threatening events; and

wherein comparing the one or more object paths to the one or more defined normal and/or abnormal object path feature models comprises comparing at least the one or more object path, or data associated therewith, to the one or more defined threatening and/or non-threatening object path feature models to determine whether the one or more object paths appears to indicate that a threatening even is occurring.

13. (cancelled)

14. (currently amended)

A system for use in monitoring a search area, the system comprising:

a plurality of dual channel imaging devices having a medium-resolution for use in daylight and a high-resolution for use in night light to cover said search area, wherein each field of view of each imaging device comprises a field of view portion which overlaps with at least one other field of view of another imaging device, wherein the field of view portion which overlaps is greater than about 25 percent device and less than about 85 percent of the field of view of the imaging device;

one or more imaging devices operable to provide frames of image data from said plurality of imaging devices representative of a search area, the image data comprising pixel value data for a plurality of pixels, wherein the frames of image data comprise at

least one frame of update image data representative of the search area in an update cycle, the at least one frame of update image data comprising update pixel value data for each of the plurality of pixels; and

a computer apparatus operable to:

generate a plurality of time varying Gaussian normal distributions for each pixel based on the pixel value data over a plurality of frames of the image data;

attempt to match the update pixel value data for each pixel to each of all of the plurality of time varying Gaussian normal distributions provided for the pixel by:

creating a narrow distribution for the pixel based on the update pixel value data and a predetermined variance, the narrow distribution being narrow relative to the plurality of time varying distributions,

computing a divergence measure between the narrow distribution created for the pixel and each of the plurality of time varying distributions provided for the pixel resulting in a plurality of divergence measures corresponding to the plurality of time varying distributions for the pixel;

determining a minimum divergence measure of the plurality of divergence measures, and

comparing the minimum divergence measure to a predetermined cutoff to determine if a match exists or does not exist;

update the plurality of time varying distributions for each pixel based on whether the pixel value data matches one of the plurality of time varying distributions provided for the pixel; and

order the updated plurality of time varying distributions for each pixel based on a probability of the time varying distributions thereof being representative of background or foreground information in the search area for use in determining whether the pixel is to be considered background or foreground information.

15. (cancelled)

16. (cancelled)

17. (original)

The system of claim 14, wherein the computer apparatus is further operable, with respect to each pixel, to:

update the plurality of time varying distributions by generating a pooled distribution based on the narrow distribution and a matched distribution if the narrow distribution matches one of the plurality of time varying distributions; and

determine if the pixel is representative of background or foreground information in the search area based on a position of the pooled distribution within the order of the updated plurality of time varying distributions.

18. (original)

The system of claim 14, wherein the computer apparatus is further operable, with respect to each pixel, to:

update the plurality of time varying distributions by replacing one of the plurality of time varying distributions with a new distribution if the narrow distribution does not match one of the plurality of time varying distributions; and

assure that the new distribution is representative of foreground information in the search area.

19. (original)

The system of claim 14, wherein the computer apparatus is further operable to orderi the updated plurality of time varying distributions for each pixel is based on weights associated with the plurality of time varying distributions.

20. (original)

The system of claim 14, wherein to at least a portion of the foreground information corresponds to one or move moving objects, and further wherein the computer apparatus is operable to track the one or move moving objects in the search area to determine object paths for the one or more moving objects.

21. (original)

The system of claim 20, wherein the computer apparatus is further operable, with respect to each pixel, to:

calculate blobs based on pixels representative of foreground information; and

filter out blobs having less than a predetermined pixel area size.

22. (original)

The system of claim 21, wherein the computer apparatus is further operable to group the blobs into object paths representative of one or more moving objects.

23. (original)

The system of claim 22, wherein the computer apparatus is further operable to group the blobs using a multiple hypotheses tracking algorithm.

24. (original)

The system of claim 20, wherein the computer apparatus is further operable to:

provide one or more defined normal and/or abnormal object path feature models based on one or more characteristics associated with normal or abnormal events; and

comparing the one or more object paths to the one or more defined normal and/or abnormal object path feature models to determine whether the one or more object paths are normal or abnormal.

25. (original)

The system of claim 20, wherein the computer apparatus is further operable to:

provide one or more defined threatening and/or non-threatening object path feature models based on one or more characteristics associated with threatening events; and

compare at least the one or more object path, or data associated therewith, to the one or more defined threatening and/or non-threatening object path feature models to

determine whether the one or more object paths appears to indicate that a threatening even is occurring.

26. (cancelled)